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(54) SYSTEM AND METHOD FOR
CHARACTERIZATION OF ELECTRICAL
PROPERTIES OF THE HEART FROM
MEDICAL IMAGES AND BODY SURFACE
POTENTIALS

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ABSTRACT

Methods and systems for estimating patient-specific cardiac electrical properties from medical image data and non-invasive electrocardiography measurements of a patient are disclosed. A patient-specific anatomical heart model is generated from medical image data of a patient. Patient-specific cardiac electrical properties are estimated by simulating cardiac electrophysiology over time in the patient-specific anatomical heart model using a computational cardiac electrophysiology model and adjusting cardiac electrical parameters based on the simulation results and the non-invasive electrocardiography measurements. A patient-specific cardiac electrophysiology model with the patient-specific cardiac electrical parameters can then be used to perform virtual cardiac electrophysiology interventions for planning and guidance of cardiac electrophysiology interventions.

